ANAHEIM SCIENTIFIC®

User Manual

Model S610

Sound Level Meter with Data Logging

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1 Introduction

Thank you for purchasing the S610 Sound Level Meter with Data Logging. This is a handheld Class 2 Sound meter that features:

- USB data logging with 14,000 records
- USB interface software of data download to PC
- Auto Ranging from 30dB to 130dB at frequencies between 31.5HZand 8 KHZ
- Low, Medium, High Ranges
- Display with 0.1dB steps on a 4 digit backlit LCD
- A and C frequency weighting
- Max/Min values display
- Data Hold
- Auto Power-Off

2 Safety Summary

CAUTION

Adhere to the following conditions for safe and effective usage of this meter

- Do not operate the meter in an environment filled with combustible gas, liquids, dust or fibers
- In order to avoid reading incorrect data, please replace the battery immediately when the symbol " " appears on the LCD. Remove the battery

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when the meter is not to be used for an extended period of time.

- In order to avoid damage caused by contamination or static electricity, do not touch the circuit board before taking adequate precautions.
- Operating environment: This instrument has been designed for usage within an environment of Pollution Degree 2
- Operation altitude: Up to 2000M
- Operation temperature & humidity: 5°C~40°C, below 80%RH
- Storage temperature & humidity: -10°C ~60°C, below 70%RH
- Avoid shaking the meter, particularly while in operation.
- Keep the microphone dry.
- For cleaning the instrument use a soft dry cloth. Never use a wet cloth, solvents or water, etc.
- Wind blowing across the microphone would bring additional extraneous noise. Once using the instrument in the presence of wind, it is necessary to mount the windscreen preventing to pick up undesirable signals.
- To achieve more accurate measurement, use an extension cable to separate the microphone from the main body so that the effect of unexpected sound reflection can be eliminated.
- Calibrate the instrument before operation if the instrument was not in use for a long time or operating in a harsh environment.

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- Weather conditions outside the specified limits and improper handling may adversely affect the accuracy and function of the meter.

3 Compliance Statements

This unit conforms to the following standards:

- IEC 61672-1 Class 2
- IEC651 Type2
- ANSI S1.4 Type2 for Sound Level Meters

	Caution: This symbol indicates that the equipment and its accessories are subject to special collection and disposal procedures

4 Product Contents and Inspection

This unit is tested prior to shipment. It is therefore ready for immediate use upon receipt. An initial physical inspection should be made to ensure that no damage has been sustained during shipment.

Inspect the packing box on receipt for any external damage. If any external damage is evident, remove the instrument and visually inspect its case and parts for

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any damage. If damage to the instrument is evident, a description of the damage should be noted on the carrier's receipt and signed by the driver or carrier agent. Save all shipping packaging for inspection. Forward a report of any damage to the agent through which the unit is procured.

Retain the original packing in case subsequent repackaging for return is required. Use of the original packing is essential.
After the mechanical inspection, verify the contents of the shipment. The items included in this package are:

- S610 Meter
- User manual
- 9V battery
- Carrying case
- Windscreen

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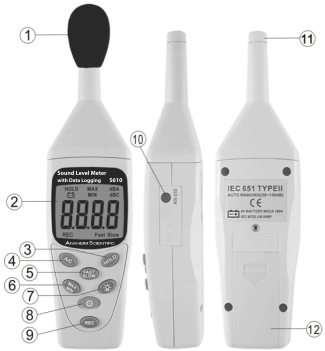
5 Device Description



1. Windscreen
2. Display
3. HOLD button
4. Frequency weighting select button
5. Time weighting select button
6. Maximum/Minimum hold button
7. Backlight button
8. Power button
9. REC button
10. USB Interface Connector
11. Microphone
12. Battery Cover

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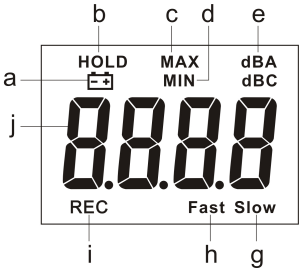
1. Windscreen:
   If you operate at wind speeds over 10m/sec, please put the protective accessories-windscreen in front of the microphone.

2. Display:



a. Low battery indication
b. DATA HOLD indication
c. Maximum indication
d. Minimum indication
e. A-Weighting
f. C-Weighting
g. Slow response
h. Fast response
i. REC response
j. Sound level read out

3. HOLD button:
   The reading data shown on the LCD can be locked while pressing the button.
4. Frequency Weighting select button:
   A: A-Weighting. For general sound level measurements. C: C-Weighting. For checking the low-frequency content of noise. (If the C-weighted level is much higher than the A-weighted level,

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then there is a large amount of low-frequency noise)

5. Time weighting select button:
   - FAST: for normal measurements.
   - SLOW: for checking average level of fluctuation noise.
6. MAX/MIN hold button:
   - Press the key to activate the function. The “MAX” symbol appears on the display and instrument measures and shows the maximum value which automatically updates itself when a larger value is measured.
   - Press the key again and the “MIN” symbol appears on the display and the instrument measures and displays the minimum value which automatically updates itself when a lower value occurs.
   - The MAX/MIN function will be disabled if the MAX/MIN is pressed for more than 1 second or the meter is turned off.
7. Backlight button: Press the button to enable the display backlight for reading in dark environments. Press for more than 1 second to disable the backlight or it will automatically turn OFF after 15 seconds.
8. Power button: Press the key for 1sec to turn the sound level meter ON or OFF. The auto power-off will engage after 5 minutes of idle time
9. REC button: Press the button to start recording data and press REC again to stop recording. The

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minimum interval is 1 second and the maximum interval is 7 hours 59 minutes 59 seconds.

10. USB Interface Connector: USB interface with a PC.
11. Microphone: 1/2 inch Electret Condenser microphone.
12. Battery cover

6 Device Operation

6.1 Preparations

1. Battery Loading: Remove the battery cover on the back and put in one 9V Battery.
2. Battery Replacement: When the battery voltage drops below the operating voltage, the mark appears. If it appears, the battery should be replaced with new one.

6.2 Making Measurements

1. Open the battery cover and install a 9 Volt battery in battery compartment.
2. Turn on power and select the desired response time and weighting. If the sound source consists of short bursts or only catching sound peak, set response to FAST. To measure average sound level, use the slow setting. Select A weighting for general noise sound level and C weighting for measuring sound level of acoustic material.
3. Hold the instrument comfortably in hand or place on a tripod and point the microphone at the

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suspected noise source. The sound pressure level will be displayed.

4. When MAX/ MIN (maximum, minimum hold) mode is chosen. The instrument captures and holds the maximum or minimum noise level. Press once to select MAX value. Press again to select MIN value, Press again to exit the MAX/MIN mode. “MAX” or ” MIN” symbol disappears.
5. Turn off the instrument and remove the battery when it is not in use.

7 Data Logging

7.1 Data Logging Requirements

- The data logging package contains
  - Custom designed USB cable for downloading
- System requirements
  - Windows 2000, Windows XP
- Minimum hardware requirements
  - Pentium III 500MHz PC compatible
  - 128MB RAM
  - At least 10MB hard disk space available to install the Sound Level Meter program
  - Recommended display resolution is 800X600 or above

7.2 Installing Data Logging Software

From the S610 CD, open the PL2303driver folder.

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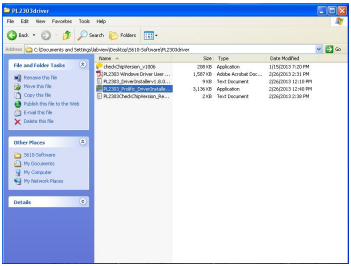
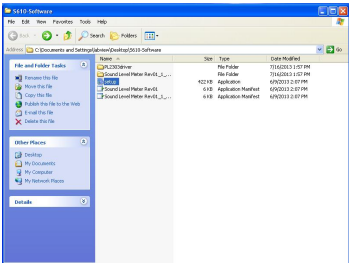
Select the PL2003_Prolific_DriverInstaller_v1.8.0.exe file and follow the instructions to install the driver.



Next open the “setup” application and follow the directions to install the Sound Level Meter program on your computer.



Next open the Sound Level Meter program.

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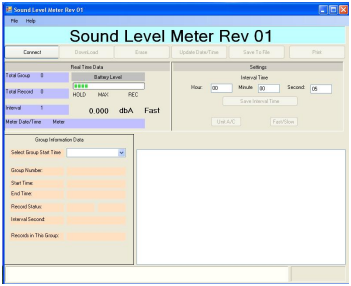
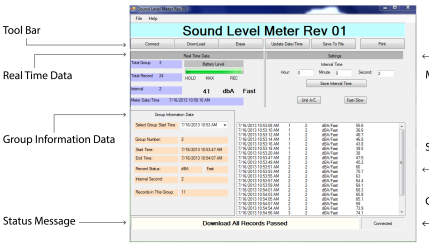


Next connect your sound level meter to the computer via the USB cable. Click on the “Connect” button on the software.

7.3 Data Logging Software Description



- Tool Bar

Tool bar section has 6 buttons:

  - [Connect To Meter] Use to connect the meter and a PC. This step is the first step to use this software.

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- [DownLoad] to download records from meter to your computer.
- [Erase] to erase all the records saved in memory on the meter. You can save the records as a .csv [Excel] file before they are completely erased if you need them for future reference.
- [Update Date/Time] to adjust the time in the meter to be same with the computer time. Remember if the battery is taken out, the clock in the meter will stop.
- [Save to File] to export the records from the list box to txt file or .csv [Excel] file. This button will be enabled after downloading records.
- [Print] to print all the downloaded data.

- Real time Data: Real time data section is used to display real time data including DB value, dba/dbc status, fast/slow status, hold, rec, max/min status. The current meter statistics including total group and total records in the memory, interval, meter date and time, are also displayed at the left side.

- Group information Data: Group information data section is used to display selected group information including start time, end time, dba/dbc status, number of records in selected group.

- Status Message: Status message is to display the current meter status such as recording, connected, disconnected, etc.

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- Setting Data: This section is used to set interval times into the meter.
- Saved Data: Data will be downloaded into this section after [DownLoad] button is pressed.
- Connected Status: This tells you if you are connected to your meter.

8 Calibration Procedures

1. Using a standard Acoustic Calibrator (94dB, 1KHz Sine wave)

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1. Adjust the settings to: dBA
2. Time weighting: FAST
3. Insert the microphone nozzle carefully into the insertion hole of the calibrator.
4. Press A/C button then press the HOLD button. Hold the 2 buttons at the same time for more than 1 second. The LCD will be blinking to confirm calibration.
5. When LCD has blinked, release the A/C and the HOLD buttons. The sound level meter will display 94.0 dBA . The calibration is complete.
6. If it does not work the first time, you can repeat the 94 dB calibration process until the meter reads 94.0 dB.
7. Recalibration cycle: 1 year

9 Specifications

Display	4 digit backlit LCD with max reading 2000
Resolution	0.1dB
Accuracy	±1.5dB (ref 94dB @1KHz)
Sample Rate	0.5 sec.
Frequency Range	31.5Hz~8KHz
Measuring level range	A Weighting 30 ~130dB C Weighting 35~130dB
Frequency weighting	A/C

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Data Logging	14,000 records
Microphone	1/2 inch Electret condenser microphone
Time weighting	FAST(125mS), SLOW(1 sec)
Level ranges	30 ~130dB (Auto Range)
Dynamic range	50dB
Power Supply	9v Battery
Battery Life	About 50 hrs (alkaline Battery)
Dimensions	200mm(L) x 55mm(W) x 38mm(H)
Weight	About 170g (Including batteries)

10 Service, Repairs, Calibration

- The following are instructions regarding policies for servicing, repairing or calibrating Anaheim Scientific products. Turnaround time is usually less than ten (10) working days unless expedited service is requested and pre-arranged.
- Send an email to service@anaheimscientific.com requesting an RMA number specifying your request for either service/repair and/or calibration with your product's model number.
- Once you receive a reply from service@anaheimscientific.com, you will be asked to ship prepaid to the address below. Package the unit carefully using filler or bubble wrap, and if possible, ship in the original box. Ship each unit

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separately. (Anaheim Scientific is not responsible for any shipping damage that may occur.)

- Include a packing list with each unit shipped stating what type of service is required and include the return shipping information: name, address and telephone number.
- If the unit is in warranty, please provide the following: proof of purchase or copy of the original invoice.
- If the unit is out of warranty, prepayment is required by Check, Money Order or Credit Card.
- Return all merchandise to Anaheim Scientific with pre-paid shipping. The flat-rate repair charge for Non-Warranty Service does not include return shipping. Return shipping to locations in North American is included for Warranty Service.
- For overnight shipments and non-North American shipping fees please contact Anaheim Scientific

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ATTN: Service/Repair
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11 Limited Two-Year Warranty

- Scientific warrants to the original purchaser that its products and the component parts thereof, will be free from defects in workmanship and materials for a period of two years from date of purchase.
- Anaheim Scientific will, without charge, repair or replace, at its option, defective product or component parts. Returned product must be accompanied by proof of the purchase date in the form of a sales receipt.
- To help us better serve you, please complete the warranty registration for your new instrument via our website www.anaheimscientific.com
- Exclusions: This warranty does not apply in the event of misuse or abuse of the product or as a result of unauthorized alterations or repairs. The warranty is void if the serial number is altered, defaced or removed.
- Anaheim Scientific shall not be liable for any consequential damages, including without limitation damages resulting from loss of use. Some states do not allow limitations of incidental or consequential damages. So the above limitation or exclusion may not apply to you.
- This warranty gives you specific rights and you may have other rights, which vary from state-to-state.

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